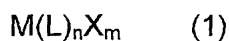


Claims

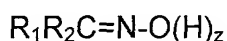
1. A process for increasing the bleaching action of peroxygen compounds comprising combining a transition metal complex having oxime ligands as a bleach catalyst with the peroxygen compounds, wherein the transition metal complex has the formula (1)



where

M is a metal atom selected from the group consisting of Mn, Fe, Co, Ni, Mo, and W,

L is the oxime ligand of the formula



R₁ is C₁-C₂₂-alkyl, C₂-C₂₂-alkenyl or C₅-C₂₄-aryl,

R₂ is H, C₁-C₂₂-alkyl, C₂-C₂₂-alkenyl, C₅-C₂₄-aryl or $R_1C=N-O(H)_z$

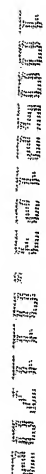
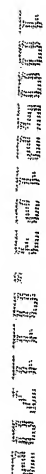
where z = 0 or 1,

X is a neutral or anion ligand selected from the group consisting of pyridines, imidazolines, methylimidazoles, picolines, lutidines, chloride, bromide, nitrate, perchlorate, citrate, hexafluorophosphate, and anions of organic acids having C₁-C₂₂ carbon atoms, n is a number from 2 to 4 and m is a number from 0 to 4.

2. The process of claim 1, wherein the peroxygen compound is selected from the group consisting of organic peracids, hydrogen peroxide, perborate and percarbonate, and mixtures thereof.

3. The process of claim 1 further comprising incorporating the transition metal complex and peroxygen compounds into a cleaning composition.

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X is a neutral or anion ligand selected from the group consisting of pyridines, imidazolines, methylimidazoles, picolines, lutidines, chloride, bromide, nitrate, perchlorate, citrate, hexafluorophosphate, and anions of organic acids having C₁-C₂₂ carbon atoms, n is a number from 2 to 4, and m is a number from 0 to 4.

9. The process of claim 8 wherein the bleach activator is selected from the group consisting of polyacylated alkylenediamines, acylated glycolurils, acylated trizine derivatives, acylated phenylsulfonates, acylated polyhydric alcohols, acylated sugar derivatives, and open-chain or cyclic nitrile quats.

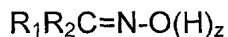
10. A transition metal complex of the formula (1)



where

M is a metal atom selected from the group consisting of Mn, Fe, Co, Ni, Mo, and W,

L is a ligand of the formula



R₁ is C₁-C₂₂-alkyl, C₂-C₂₂-alkenyl or C₅-C₂₄-aryl,

R₂ is H, C₁-C₂₂-alkyl, C₂-C₂₂-alkenyl, C₅-C₂₄-aryl or $R_1C=N-O(H)_z$

where z = 0 or 1,

X is a neutral or anion ligand selected from the group consisting of pyridines, imidazolines, methylimidazoles, picolines, lutidines, chloride, bromide, nitrate, perchlorate, citrate, hexafluorophosphate, and anions of organic acids having C₁-C₂₂ carbon atoms, n is a number from 2 to 4, and m is a number from 0 to 4.

11. A cleaning composition comprising the transition metal complex as in claim 10.

12. The cleaning composition as claimed in claim 11, which comprises 0.0025% by weight to 1% by weight of the transition metal complex.
13. The cleaning composition as claimed in claim 11, which comprises 0.01% by weight to 0.1% by weight of the transition metal complex.
14. The cleaning composition as claimed in claim 11, which, in addition to the transition metal complex, comprises from 1% to 10% by weight of a bleach activator.
15. The cleaning composition as claimed in claim 11, which, in addition to the transition metal complex, comprises from 2% to 6% by weight, of a bleach activator.
16. The cleaning composition of claim 11 wherein the transition metal complex comprises
- c) [bis(cyclohexanone oxime)bis(cyclohexanone oximato)bis(pyridine)-manganese(II)], or
 - d) [bis(diphenylglyoximato)bis(pyridine)manganese(II)]